

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-11. (canceled)

12. (currently amended) ~~Process~~ A process for detecting ~~[[the]]~~ a bending angle of a plate sheet that has been bent on a matrix die along a bending line, comprising ~~the following step:~~

~~[[ - ]]~~ generating at least two flows of compressed air in two points of said matrix die ~~points~~ that are totally or partially covered by the plate sheet during its bending step;

measuring ~~[[the]]~~ a pressure variation between measured pressure values of the at least two flows of compressed air during said bending step; and

processing the measured pressure values and comparing ~~then~~ them with predetermined sample values through calibration.

13. (currently amended) ~~Process~~ The process according to claim 12, ~~characterised in that it comprises:~~ wherein said at least two flows of compressed air comprise

a first flow of compressed air that is directed perpendicular to the plate sheet before its bending and is placed

on the matrix die next to ~~[[the]]~~ a plane sheet-bearing surface next to ~~[[the]]~~ a matrix die groove; and

a second flow directed perpendicular to ~~[[the]]~~ a slot surface of said matrix die.

14. (currently amended) ~~Process~~ The process according to claim 12, ~~characterised in that it provides for further comprising~~ measuring ~~[[the]]~~ a pressure of a pair of compressed air flows on both faces of a slot ~~faees~~ in said matrix die.

15. (currently amended) ~~Process~~ The process according to claim 12, ~~characterised in that~~ wherein the pressure ~~measure~~ variation measured between the at least two air flows is performed with a differential pressure transducer ~~of the differential type~~, connected to ~~[[the]]~~ two pneumatic supply ducts of a pair of orifices on the matrix die.

16. (currently amended) ~~Process~~ The process according to claim 12,

~~characterised in that~~ wherein the pressure difference between the at least two air flows can be kept constant at a zero value, by means of a servo-controlled device comprising two orifices and a shutter, which is able to externally compensate for ~~[[the]]~~ covering differences of orifices on the matrix die generated by ~~[[the]]~~ plate abutment, and

~~characterised in that the~~ wherein an angle measure ~~is referred~~ refers to ~~[[the]]~~ a position measure of ~~[[the]]~~ an external compensating device.

17. (currently amended) ~~Process~~ The process according to claim 12, ~~characterised in that~~ wherein, in order to more easily detect ~~[[the]]~~ small variations with respect to a provided bending angle, ~~[[the]]~~ a servo-controlled device is kept in a position corresponding to ~~[[the]]~~ a provided angle and ~~[[the]]~~ a pressure difference is measured, provided by ~~[[the]]~~ a transducer around ~~[[the]]~~ a zero value.

18. (currently amended) ~~Process~~ The process according to claim 12, ~~characterised in that the~~ wherein a common compressed air supply line is periodically shut off to allow compensating for differential pressure sensor zero errors.

19. (currently amended) ~~Process~~ The process according to claim 12, ~~characterised in that~~ wherein a single pressure measuring system can be used with different pairs of orifices obtained in different matrix dies, by selecting every time ~~[[the]]~~ pairs of orifices, by means of solenoid valves on respective pneumatic supply ducts.

20. (currently amended) ~~Process~~ The process according to claim 12, ~~characterised in that the~~ wherein a pair of orifices for measuring the bending angle is obtained on ~~[[the]]~~ a punch.

21. (currently amended) ~~Device~~ A device for measuring ~~[[the]]~~ a bending angle comprising:

a compressed air system ~~on whose~~ having a supply line ~~it provides~~ provided with a system pressure reducer;

two pairs of orifices arranged on ~~[[the]]~~ faces of a matrix die ~~face that get in contact with the~~ a plate sheet in symmetrical positions with respect to ~~[[the]]~~ a vertical axis of a groove apex of the matrix die ~~groove apex~~, each one of said orifices being supplied by a respective flow of compressed air,

~~characterised in that the~~ wherein a mean of measures of plate bearing angles onto the matrix die is performed by mutually pneumatically connecting ~~[[the]]~~ a respective first pair of said two pairs of orifices which are external to ~~[[the]]~~ a matrix die slot and ~~[[the]]~~ a corresponding second pair of said two pairs of orifices which are internal to the matrix die slot ~~itself~~.

22. (new) A device for measuring a bending angle of a plate sheet being bent in a matrix device, said device comprising:

a compressed air system having a supply line provided with a system pressure reducer;

two pairs of orifices arranged on respective faces of

the matrix die that contact the plate sheet in symmetrical positions with respect to a vertical axis of a groove apex of the matrix die, said two pairs of orifices being supplied by a respective flow of compressed air, a first flow of compressed air is directed to respective first ones of said two pairs of orifices that are perpendicular to the plate sheet before its bending and exits the matrix die adjacent to a surface of said matrix die bearing said plate sheet, a second flow of compressed air is directed to corresponding second ones of said two pairs of orifices that are perpendicular to a slot in said matrix die formed at an angle with respect to said vertical axis; and

a differential pressure transducer connected between respective pairs of said two pairs of orifices.

23. (new) The device according to claim 22, further comprising a servo-controlled device that keeps a pressure difference between the first and second flows of compressed air constant at a zero value, said servo-controlled device comprising two orifices and a shutter, which externally compensates for covering differences of the two pairs of orifices on the matrix die generated by the plate sheet abutting the matrix die.